

AS 2243.1:2021



Safety in laboratories

Part 1: Planning and operational aspects



AS 2243.1:2021

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Preface

This Standard was prepared by the Australian members of Joint Standards Australia/Standards New Zealand Committee, CH-026, Safety in Laboratories, to supersede AS/NZS 2243.1:2005.

After consultation with stakeholders in both countries, Standards Australia and Standards New Zealand decided to develop this Standard as an Australian Standard rather than an Australian/New Zealand Standard.

The objective of this Standard is to provide general information, recommendations and procedures which will promote safe working in laboratories.

Major changes in this edition are as follows:

- (a) Update of existing definitions and addition of new definitions and abbreviated terms.
- (b) Addition of new clauses on electrical installations, as AS 2243.7—1991, *Safety in laboratories, Part 7: Electrical aspects*, is now obsolete.
- (c) Addition of new clauses on nanotechnology and fieldwork.
- (d) Update of existing Appendices. and addition of a new Appendix containing a field trip plan.

This Standard is Part 1 of an 8-part series designed to provide basic coverage of all important aspects of the safety function in laboratories. It deals with the general aspects of safety common to all kinds of laboratories and is intended to be used in conjunction with other Parts of the series, which relate to particular aspects of laboratory operations and to particular kinds of hazards. It emphasizes the importance of preventive measures and sets out safe practices, emergency procedures, and first aid.

The other Parts in the series are as follows:

AS 2243.2, *Safety in laboratories, Part 2: Chemical aspects and storage*

AS/NZS 2243.3, *Safety in laboratories, Part 3: Microbiological safety and containment*

AS/NZS 2243.4, *Safety in laboratories, Part 4: Ionizing radiations*

AS/NZS 2243.5, *Safety in laboratories, Part 5: Non-ionizing radiations — Electromagnetic, sound and ultrasound*

AS/NZS 2243.6, *Safety in laboratories, Part 6: Plant and equipment aspects*

AS/NZS 2243.8, *Safety in laboratories, Part 8: Fume cupboards*

AS/NZS 2243.9, *Safety in laboratories, Part 9: Recirculating fume cabinets*

The term “informative” is used in Standards to define the application of the appendix to which it applies. An “informative” appendix is only for information and guidance.

Contents

Preface	ii
Introduction	vi
Section 1 Scope and general	1
1.1 Scope.....	1
1.2 Application.....	1
1.3 Normative references.....	1
1.4 Terms and definitions.....	2
Section 2 Planning the laboratory for safety	7
2.1 General.....	7
2.2 Design and construction.....	7
2.2.1 General.....	7
2.2.2 Laboratory layout.....	7
2.2.3 Protection against sunlight.....	8
2.2.4 Eating facilities.....	8
2.2.5 Amenities.....	8
2.2.6 Write-up areas.....	8
2.2.7 Storage place.....	8
2.2.8 Access for disabled persons.....	8
2.3 Fire detection and fire protection.....	8
2.4 Emergency alarm systems and associated operations.....	9
2.5 Information on substances.....	9
2.5.1 Safety data sheets and inventory.....	9
2.5.2 Labelling.....	10
2.5.3 Warnings.....	10
2.5.4 Liaison with emergency services.....	10
2.6 Safety equipment.....	10
2.6.1 General.....	10
2.6.2 Additional safety equipment.....	10
2.6.3 Self-contained breathing apparatus.....	11
2.7 Room ventilation.....	11
2.7.1 General.....	11
2.7.2 Ventilation requirements.....	11
2.7.3 Heating and cooling.....	11
2.8 Local exhaust ventilation (including fume cupboards).....	12
2.8.1 General.....	12
2.8.2 Installation.....	12
2.8.3 Ducted fume cupboards.....	12
2.8.4 Recirculating fume cabinets.....	12
2.8.5 Biological safety cabinets.....	12
2.8.6 Cytotoxic drug safety cabinets.....	13
2.8.7 Other types of local exhaust ventilation.....	13
2.9 Electrical installations.....	13
2.9.1 General.....	13
2.9.2 Protection and emergency isolation of final subcircuits.....	14
2.9.3 Flexible cords.....	14
2.9.4 Electrical leads and electrical portable outlet devices (EPODs).....	14
2.9.5 Extension cords.....	14
2.9.6 Inspection of electrical equipment.....	15
2.9.7 Protective devices for special equipment.....	15
2.9.8 Experimental equipment.....	15
2.9.9 Live unattended equipment.....	16
2.9.10 Electrophoresis apparatus.....	16
Section 3 Laboratory safety and emergency management	18

3.1	Laboratory safety management systems	18
3.1.1	General	18
3.1.2	Risk assessment	18
3.1.3	Change in laboratory tasks	18
3.1.4	Management system components	19
3.1.5	Working in isolation	20
3.2	Fire, emergency and rescue procedures	21
3.2.1	General	21
3.2.2	Primary emergency procedure	21
3.2.3	Evacuation of the building	22
3.3	Safety inspections	22
Section 4	General safety procedures	23
4.1	Requirements for safe conduct	23
4.2	Use of personal protective equipment (PPE)	24
4.2.1	General	24
4.2.2	Clothing	24
4.2.3	Eye and face protection	24
4.2.4	Hearing protection	25
4.2.5	Gloves	25
4.2.6	Safety footwear	25
4.2.7	Respiratory protection	25
4.2.8	Safety helmets	26
4.2.9	Other personal protection	26
4.3	Containers for substances	26
4.3.1	General	26
4.3.2	Materials of construction	26
4.3.3	Labelling	26
4.3.4	Volume, quantity and storage	26
4.4	Use of local exhaust ventilation (including fume cupboards)	26
4.4.1	General	26
4.4.2	The use of fume cupboards	27
4.4.3	The use of biological safety cabinets	27
4.4.4	The use of cytotoxic drug safety cabinets	27
4.5	General laboratory practices	27
4.5.1	Handling of glass	27
4.5.2	Stirring	28
4.5.3	Use of flexible tubing	28
4.5.4	Pipetting	28
4.5.5	Solvent extraction	28
4.5.6	Operations involving compressed and liquefied gases	28
4.5.7	Operations involving cryogenic liquids	29
4.5.8	Use of fail-safe devices	29
4.5.9	Use of ultraviolet lamps, arcs, and high-intensity sources	29
4.5.10	Handling of human biological material	29
4.5.11	Handling of cytotoxic drugs	29
4.5.12	Temperature measurement	30
4.5.13	Storage, handling and use of substances	30
4.6	Operation of instruments	30
4.7	Operations under vacuum	30
4.7.1	Vacuum distillation and evaporation	30
4.7.2	Use of vacuum pumps	30
4.7.3	Use of traps	31
4.7.4	Closing down vacuum experiments	31
4.7.5	Filtration	31
4.7.6	Vacuum glassware	31
4.8	Operations under internal pressure	32
4.9	Operations using microwave equipment	32
4.10	Handling, labelling and disposal of laboratory wastes	33

4.10.1	General	33
4.10.2	Collection.....	33
4.10.3	Segregation.....	33
4.10.4	Transfer and storage.....	33
4.10.5	Disposal.....	34
4.11	Nanotechnology.....	34
4.12	Fieldwork.....	34
4.12.1	Scope.....	34
4.12.2	HSE risk management.....	34
4.12.3	Field trip plan.....	35
4.12.4	Hazardous work.....	35
4.12.5	Communication.....	36
4.12.6	Emergency plan.....	36
4.12.7	Site environment.....	36
4.12.8	Training and induction.....	36
4.12.9	Plant and equipment.....	36
4.12.10	Transport and travel.....	37
Appendix A (informative) Automatic fire detection or protection devices for hazardous areas		38
Appendix B (informative) High risk hazards		39
Appendix C (informative) Field trip plan.....		40
Bibliography.....		42

Introduction

Safety in laboratories is impacted upon by design and construction. When combined with systems of work that are based on the recognition of hazards and control of risks, and appropriate attitudes and behaviours, we have an integrated approach to achieving a safe workplace.

Everyone has a responsibility to work safely in laboratories. The aim is for every person to be able to make informed decisions based on sound risk management principles.

Top leadership has a duty to provide information, instruction, training and supervision, and to communicate and reinforce safety rules and work practices. Increased alertness is required with personnel who are at greater risk of injury because of their age, inexperience and unfamiliarity with the work surroundings.

It is recommended that a health and safety management system or a quality management system be adopted for the control and review of all laboratory practices and procedures.

Australian Standard®

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Section 1 Scope and general

1.1 Scope

This Standard sets out requirements, general procedures, precautions, recommendations and information designed to promote safety of persons and property in laboratory operations. The safety aspects described in this Standard apply to laboratory staff, maintenance staff, contractors, visitors and other authorized personnel, including students, cleaners and security staff who use or enter the laboratory facilities.

This Standard deals specifically with safe practices in laboratories and does not cover the design and construction of laboratories, which is covered in building regulations and is the subject of AS/NZS 2982.

1.2 Application

This Standard should be used in conjunction with the applicable part(s) of AS/NZS 2243 series that is relevant to the types of hazards commonly found in the laboratory and the common types of work being carried out in the laboratory.

For information for areas not covered within the AS/NZS 2243 series, refer to national, state or territory regulations. If the requirements of any part of this Standard conflict with any national, state or territory regulations, the statutory regulations apply.

While this Standard has been developed for laboratories in buildings, it may be used for guidance for laboratories and laboratory activities in other locations, such as in the field.

1.3 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document.

NOTE Documents for informative purposes are listed in the Bibliography.

AS 1530.4, *Methods for fire tests on building materials, components and structures, Part 4: Fire-resistance tests of elements of building construction*

AS 1851.1, *Maintenance of fire protection equipment, Part 1: Portable fire extinguishers and fire blankets*

AS 1894, *The storage and handling of non-flammable cryogenic and refrigerated liquids*

AS 2243.2, *Safety in laboratories, Part 2: Chemical aspects and storage*

AS 2252.1, *Biological safety cabinets, Part 1: Biological safety cabinets, (Class I) for personnel and environment protection*

AS 2252.2, *Controlled environments, Part 2: Biological safety cabinets Class II — Design*

AS 2252.5, *Controlled environments, Part 5: Cytotoxic drug safety cabinets (CDSC) — Design, construction, installation, testing and use*

AS 2444, *Portable fire extinguishers and fire blankets — Selection and location*

AS 4332, *The storage and handling of gases in cylinders*